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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/106,994	06/29/1998	TONIA G. MORRIS	INTL-0061(P5	7440

7590 09/11/2003

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EXAMINER

WHIPKEY, JASON T

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 09/11/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/106,994

Applicant(s)

MORRIS ET AL.

Examiner

Jason T. Whipkey

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-10 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-10 and 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 1998 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed June 16, 2003, have been fully considered but they are not persuasive.

Regarding the rejection of claims 1-10, Applicant argues that there is no motivation to modify Baker to have each capacitor integrate a different primary color component. While it is true that there is no discussion in Baker of using capacitors 2a and 2b to integrate different color components, the limitation that articulates that a separate storage area be provided for each primary color component may be found in Elabd (see Figure 3). Baker's teachings make Applicant's invention obvious over Elabd, not vice versa.

Applicant argues that the rejection of claims 11-17 is improper; however, the examiner notes that claims 11-17 were cancelled in the amendment filed August 29, 2002.

Claims 18-24 are now rejected over Elabd in view of Baker. See the examiner's response to Applicant's arguments regarding the rejection of claims 1-10.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 4, 6, 9, 18, 19, 21, and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elabd (U.S. Patent No. 5,754,229) in view of Baker (U.S. Patent No. 4,845,540).

Regarding claims 1, 6, 18, 19, 21, and 22-28, Elabd discloses an image sensor with an array 480 of photosensitive elements 484 (Figure 3). Filters 462 in wheel 460 are used in front of the image sensor (column 2, lines 45-49). Interface device 92 controls the filter wheel 82 (column 9, lines 11-13).

The entire resolution of the imager may or may not be used to capture red, green, and blue images (column 4, lines 57-59). Storage location 490 may be used to individually store the RGB images captured by elements 484. Elabd teaches that charges from successive RGB exposures are stored sequentially in register 490 (column 5, lines 21-25).

Elabd is silent with regard to coupling the photosensitive elements to the storage locations during the integration intervals.

Baker shows a pixel sensor in Figure 2. The detector element 1 produces a current signal that is integrated by alternately switchable capacitors 2a and 2b (column 9, lines 34-45). Flip-flop circuit 17 alternately couples detector element 1 to capacitor 2a and capacitor 2b (column 10, lines 28-42). Therefore, capacitor 2a integrates charge during a first integration interval and capacitor 2b integrates charge during a second integration interval.

As stated in column 9, lines 46-52, an advantage to using a storage location to integrate current from a photodetector element directly is that the photodetector element may be operated continuously, since the photodetector need not halt operation in order to transfer integrated charge. For this reason, it would have been obvious at the time of invention to have Elabd's sensor integrate charge directly in the storage locations.

Regarding claims 4 and 9, Elabd teaches that analog charges are stored (column 2, lines 62-65).

5. Claims 3, 5, 8, 10, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elabd in view of Baker and further in view of Yanai (U.S. Patent No. 5,872,596).

Claims 3, 5, 8, 10, and 20 may be treated like claims 1, 1, 6, 6, 18, and 18, respectively. In all of these claims, however, Elabd and Baker are silent with regard to including an A/D converter in the circuitry of each pixel sensor.

Yanai discloses an image pickup device with pixels as shown in Figure 34. Each pixel includes an A/D converter 11, which allows a digital signal to be stored in the pixel's shift register 12. As stated in column 29, lines 32-37, this reduces the amount of

Art Unit: 2612

analog information transfer, resulting in an image of higher quality. Therefore, it would have been obvious to have Elabd's image sensor perform A/D conversion within each pixel.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2612

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason T. Whipkey, whose telephone number is (703) 305-1819. The examiner can normally be reached Monday through Friday from 9 A.M. to 6:30 P.M. eastern daylight time, alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber, can be reached on (703) 305-4929. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communication and (703) 872-9315 for After Final communication.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (703) 306-0377.

Response to this action should be mailed to:

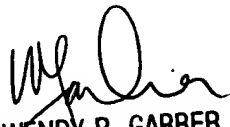
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or faxed to the appropriate number above for communications intended for entry. (For informal or draft communications, please label "**PROPOSED**" or "**DRAFT**".)

Hand-delivered responses should be brought to the sixth floor receptionist of Crystal Park II, 2121 Crystal Drive in Arlington, Virginia.

JTW

JTW
September 2, 2003


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600